

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/009023 A3

(51) International Patent Classification⁷: A61K 31/44,
31/12, 31/05

(21) International Application Number:
PCT/US2003/022576

(22) International Filing Date: 18 July 2003 (18.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/396,584 18 July 2002 (18.07.2002) US

(71) Applicant (for all designated States except US): UNIVER-
SITY OF UTAH RESEARCH FOUNDATION [US/US];
615 Arapen Drive, Suite 110, Salt Lake City, UT 84108
(US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MULLALLY,
James, E. [US/US]; 390 Emory Drive, Atlanta, GA 30307
(US). MOOS, Phillip [US/US]; c/o Huntsman Cancer
Institute, 2000 Circle of Hope, Salt Lake City, UT 84112
(US). FITZPATRICK, Frank, A. [US/US]; c/o Huntsman
Cancer Institute, 2000 Circle of Hope, Salt Lake City, UT
84112 (US).

(74) Agents: BOOTH, PAUL M et al.; Heller Ehrman White
& McAuliffe LLP, 1666 K Street, N.W., Suite 300, Wash-
ington, DC 20006-1228 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
17 June 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

WO 2004/009023 A3

(54) Title: NOVEL INHIBITORS OF UBIQUITIN ISOPEPTIDASES

(57) Abstract: A novel class of inhibitors of ubiquitin isopeptidases is disclosed that cause tumor cell death via molecular mecha-
nisms independent of p53. Specifically, compounds containing an α,β -unsaturated ketone with a sterically accessible electrophilic
 β -carbon and related compounds are identified herein. Pharmaceutical compositions comprising the inhibitor compounds and meth-
ods of using the compounds for treating a variety of disease states are disclosed.

BEST AVAILABLE COPY